3.9 DRAINAGE AND WATER QUALITY

3.9.1 ENVIRONMENTAL SETTING

Groundwater

Groundwater is the sole source of municipal water for the City of Lodi. The water is supplied by wells located throughout the City that are activated, as required, to serve demands. The EIR prepared for the City's General Plan Update in 1990 identified existing shortages in the City's supply at that time, and predicted continued shortfalls due to overdraft by the year 2007. In the summers of 1995 and 1996 the City faced possible shortages of well capacity. However, concerted water conservation efforts in the City have reduced the demand for groundwater over the past several years. In the each of the years 1999 and 2000, for example, approximately 5.45 billion gallons of water were pumped to meet the City's water demands. This figure represents a 17% per person reduction in water use from 1986.

New wells are currently under construction that will allow the City to meet future demands.[1] In addition to these, the City has emergency standby wells and a 1 million-gallon water storage tank and pumping station that has the peak pumping capacity of three wells. The water demand associated with the proposed project is substantially in conformance with that forecast under the current General Plan and in the 2001 Urban Water Management Plan.[2]

The City of Lodi General Plan Policy Document, prepared in 1991, identified dibromochloropropane (DBCP) contamination as the most significant groundwater quality problem within the area. DBCP was used by area farmers to kill nematodes in vineyards. DBCP was banned in California in 1977, but is still present in trace levels in some groundwater. Nine of Lodi's 24 active wells have no detectable DBCP. Six wells have filters to remove DBCP. The remaining nine meet State and Federal standards, but have trace amounts of DBCP. The levels of DBCP found in the City's drinking water supplied by the wells is below the level considered safe by the US EPA and the State of California Department of Health Services. Other groundwater contaminants found in the area include detectable amounts of PCE and TCE in shallow groundwater in the north and central downtown areas, and low levels of arsenic and nitrate. Although trace amounts of these contaminants have been found, no operating wells have been found to be out of compliance with any US EPA or State of California Department of Health Services drinking water standards.

Storm Water

Regulatory Framework

Surface water quality is regulated to protect aquatic life and human health according to the provisions of the Federal Clean Water Act (and associated federal regulations) and the California Porter-Cologne Water Quality Control Act, referred to respectively as the Federal and State Acts. The State Act established the nine Regional Water Quality Control Boards (Regional Boards) and the State Water

[1,2] F. Wally Sandelin, City Engineer, January 2, 2003.

Resources Control Board (State Board). In California, the discharge permitting provisions of the Federal Act have been delegated by U.S. EPA to the State and Regional Boards. The project is located within the jurisdiction of the Central Valley Regional Water Quality Control Board (CVRWQCB). The CVRWQCB has a Water Quality Control Plan for basins within its jurisdiction (Basin Plan) that identifies beneficial uses of surface waters, establishes numeric and narrative objectives for protection of beneficial uses, and sets forth policies to guide the implementation of programs to attain the objectives.

The proposed project would disturb an area exceeding five acres in size. The project is therefore subject to National Pollutant Discharge Elimination System (NPDES) permit requirements. NPDES permit conformance requires that the project applicant file a Notice of Intent to comply with the terms of the General Permit to Discharge Storm Water Associated with Construction Activity (NOI), and submit a Storm Water Pollution Prevention Plan (SWPPP) to the CVRWQCB. A SWPPP contains a listing and implementation plan for the storm water Best Management Practices (BMPs) that would be implemented during construction of the project to minimize erosion and sedimentation, as well as during permanent post-construction operations.

Storm Water Quality

The majority of the project site is occupied by a vacant agricultural field. Surrounding land uses consist of residential development to the north, commercial development to the east and agricultural fields to the west and south. The expected pollutants in the existing condition storm water runoff from the project site are pesticides and suspended solids from agricultural fields. In addition, runoff from areas surrounding the project site could potentially include trash, nutrients, suspended solids, bacteria, oil and grease, and household hazardous wastes associated with residential and commercial development. Currently, the site does not contain any structural Best Management Practices (BMPs). It is likely that most of the potential pollutants are removed through the use of natural conveyance. Conveying flows overland through vegetation affords some infiltration and biofiltration of runoff and thus, removal of potential pollutants. A drawback to conveying flows overland is that it tends to create erosion problems, thereby increasing suspended solids in the runoff.

Pollutants found in urban runoff can be classified by the type of land use activity that generates them. General classifications include Agricultural, Landscape, Transportation, Construction, and Disposal. Typical sources of these pollutants include agricultural practices of fertilizer and pesticide application, outdoor washing activities that flow into storm drains and surface waters, deposition of contaminants released into the atmosphere (either direct deposition or washed from the atmosphere during rain events), soils that become exposed during construction activities, pollutants from automobiles, and improper disposal or contaminant spills.

The most common categories of storm water pollutants are described below. Many of these pollutants are found in urban runoff and would likely be generated by the construction and operation of the proposed retail center. Runoff pollutants are washed into storm drains and are then conveyed to receiving waters downstream. Receiving waters can assimilate a limited quantity of various constituent elements. However, there are thresholds beyond which the measured amount becomes a pollutant and results in an undesirable impact.

***Sediment* -** Sediment is made up of tiny soil particles that are washed or blown into surface waters. It is typically the major pollutant by volume in surface water. Suspended soil particles can cause the water to look cloudy or turbid. The fine sediment particles also act as a vehicle to transport other pollutants including nutrients, trace metals, and hydrocarbons. Construction sites are the largest source of sediment for urban areas under development. Another major source of sediment is stream bank erosion, which may be accelerated by increases in peak rates and volumes of runoff due to urbanization.

***Nutrients* -** Nutrients are a major concern for surface water quality, especially phosphorous and nitrogen, which can cause algal blooms and excessive vegetative growth. Of the two, phosphorus is usually the limiting nutrient that controls the growth of algae in lakes or other non-moving water bodies. The orthophosphorous form of phosphorus is a readily available nutrient for plant growth. The ammonium form of nitrogen can also have severe effects on surface water quality. The ammonium is converted to nitrate and nitrite forms of nitrogen in a process called nitrification. This process consumes large amounts of oxygen, which can impair the dissolved oxygen levels in water. The nitrate form of nitrogen is very soluble and is found naturally at low levels in water. When nitrogen fertilizer is applied to lawns or other areas in excess of plant needs, nitrates can leach below the root zone, eventually reaching ground water. Orthophosphate from auto emissions also contributes phosphorus in areas with heavy automobile traffic. As a general rule of thumb, nutrient export is greatest from development sites with large impervious areas. Other problems resulting from excess nutrients are 1) surface algal scums, 2) water discolorations, 3) odors, 4) toxic releases, and 5) overgrowth of plants. Common measures for nutrients are total nitrogen, organic nitrogen, total Kjeldahl nitrogen (TKN), nitrate, ammonia, total phosphate, and total organic carbon (TOC).

***Trace Metals* -** Trace metals are primarily of concern because of their toxic effects on aquatic life and their potential to contaminate drinking water supplies. The most common trace metals found in urban runoff are lead, zinc, and copper. Fallout from automobile emissions is also a major source of lead in urban areas. A large fraction of the trace metals in urban runoff are attached to sediment and this effectively reduces the level that is immediately available for biological uptake and subsequent bioaccumulation. Metals associated with the sediment settle out rapidly and accumulate in the soils. Also, urban runoff events typically occur over a short duration, which reduces the amount of exposure, which could be toxic to the aquatic environment. The toxicity of trace metals in runoff varies with the hardness of the receiving water. As total "hardness" of the water increases, the threshold concentration levels for adverse effects increases.

***Oxygen-Demanding Substances* -** Aquatic life is dependent on the dissolved oxygen (DO) in water. When organic matter is consumed by microorganisms, then DO is also consumed in the process. A rainfall event can deposit large quantities of oxygen demanding substances in lakes and streams. The biochemical oxygen demand of typical urban runoff is on the same order of magnitude as the effluent from an effective secondary wastewater treatment plant. A problem from low DO can result when the rate of oxygen-demanding material exceeds the rate of replenishment. Oxygen demand is estimated by direct measure of DO and indirect measures such as biochemical oxygen demand (BOD), chemical oxygen demand (COD), oils and greases, and total organic carbon (TOC).

***Bacteria* -** Bacteria levels in undiluted urban runoff exceed public health standards for water contact recreation almost without exception. Studies have found that total coliform counts exceeded EPA water quality criteria at almost every site examined and almost for each time it rained. The coliform bacteria that are detected may not be a health risk in themselves, but are often associated with human pathogens.

Oil and Grease - Oil and grease contain a wide variety of hydrocarbons some of which could be toxic to aquatic life in low concentrations. These materials initially float on water and create the familiar rainbow-colored film. Hydrocarbons have a strong affinity for sediment and quickly become absorbed to it. The major source of hydrocarbons in urban runoff is through leakage of crankcase oil and other lubricating agents from automobiles onto pervious surfaces. Hydrocarbon levels are highest in the runoff from parking lots, roads, and service stations. Residential land uses generate less hydrocarbons export, although illegal disposal of waste oil into storm waters can be a local problem.

Other Toxic Chemicals - Priority pollutants are generally related to hazardous wastes or toxic chemicals and are occasionally detected in storm water. Priority pollutant scans have been conducted in previous studies of urban runoff, which evaluated the presence of over 120 toxic chemicals and compounds. The scans rarely revealed toxins that exceeded the current safety criteria. The urban runoff scans were primarily conducted in suburban areas not expected to have many sources of toxic pollutants (with the possible exception of illegally disposed or applied household hazardous wastes). Measures of priority pollutants in storm water include: 1) phthalate (plasticizer compound), 2) phenols and creosols (wood preservatives), 3) pesticides and herbicides, 4) oils and greases, and 5) metals.

Standard parameters, which can assess the quality of storm water, provide a method of measuring impairment. A background of these typical characteristics assists in understanding water quality requirements. The quantity of a material in the environment and its characteristics determines the degree of availability as a pollutant in surface runoff. In an urbanized area, the quantity of certain pollutants in the environment is a function of the intensity of the land use. For instance, a high density of automobile traffic makes a variety of potential pollutants (such as lead and hydrocarbons) more available. The availability of a material, such as a fertilizer, is a function of the quantity and the manner in which it is applied. Applying fertilizer in quantities that exceed plant needs leaves the excess nutrients available for loss to surface or ground water.

The physical properties and chemical constituents of water have served traditionally as the primary measures for monitoring and evaluating water quality. Evaluating the condition of water via a water quality standard means evaluating its physical, chemical, or biological characteristics. Water quality parameters for storm water comprise a long list and are classified in many ways. In many cases, the concentration of an urban pollutant, rather that the annual load of that pollutant, is needed to assess a water quality problem. Some of the physical, chemical or biological characteristics that evaluate the quality of the surface runoff are outline below:

Dissolved Oxygen - Dissolved oxygen in the water has a pronounced effect on the aquatic organisms and the chemical reactions that occur. It is one of the most important biological water quality characteristics in the aquatic environment. The dissolved oxygen concentration of a water body is determined by the solubility of oxygen, which is inversely related to water temperature, pressure, and biological activity. Dissolved oxygen is a transient property that can fluctuate rapidly in time and space. Dissolved oxygen represents the status of the water system at a particular point and time of sampling. The decomposition of organic debris in water is a slow process and the resulting changes in oxygen status respond slow also. The oxygen demand is an indication of the pollutant load and includes measurements of biochemical oxygen demand or chemical oxygen demand.

Biochemical Oxygen Demand (BOD) **-** The biochemical oxygen demand (BOD) is an index of the oxygen-demanding properties of the biodegradable material in the water. Samples are taken from the field and incubated in the laboratory at 20^{o}C, after which the residual dissolved oxygen is measured. The BOD value commonly referenced is the standard 5-day values. These values are useful in assessing stream pollution loads and for comparison purposes.

Chemical Oxygen Demand **-** The chemical oxygen demand (COD) is a measure of the pollutant loading in terms of complete chemical oxidation using strong oxidizing agents. It can be determined quickly because it does not rely on bacteriological actions as with BOD. COD does not necessarily provide a good index of oxygen demanding properties in natural waters.

Total Dissolved Solids (TDS) **-** TDS concentration is determined by evaporation of a filtered sample to obtain residue whose weight is divided by the sample volume. The TDS of natural waters varies widely. There are several reasons why TDS is an important indicator of water quality. Dissolved solids affect the ionic bonding strength related to other pollutants such as metals in the water. TDS are also a major determinant of aquatic habitat. TDS affects saturation concentration of dissolved oxygen and influences the ability of a water body to assimilate wastes. Eutrophication rates depend on total dissolved solids.

pH **-** The pH of water is the negative log, base 10, of the hydrogen ion (H^+) activity. A pH of 7 is neutral; a pH greater than 7 indicates alkaline water; a pH less than 7 represents acidic water. In natural water, carbon dioxide reactions are some of the most important in establishing pH. The pH at any one time is an indication of the balance of chemical equilibrium in water and affects the availability of certain chemicals or nutrients in water for uptake by plants. The pH of water directly affects fish and other aquatic life and generally toxic limits are pH values less than 4.8 and greater than 9.2.

Alkalinity **-** Alkalinity is the opposite of acidity, representing the capacity of water to neutralize acid. Alkalinity is also linked to pH and is caused by the presence of carbonate, bicarbonate, and hydroxide, which are formed when carbon dioxide is dissolved. A high alkalinity is associated with a high pH and excessive solids. Most streams have alkalinities less than 200 mg/l and ranges of alkalinity of 100-200mg/l seem to support well-diversified aquatic life.

Specific Conductance - The specific conductivity of water, or its ability to conduct an electric current, is related to the total dissolved ionic solids. Long term monitoring a project waters can develop a relationship between specific conductivity and TDS. Its measurement is quick and inexpensive and can be used to approximate TDS. Specific conductivities in excess of 2000 µohms/cm indicate a TDS level too high for most freshwater fish.

Turbidity **-** The clarity of water is an important indicator of water quality that relates to the alkalinity of photosynthetic light to penetrate. Turbidity is an indicator of the property of water that causes light to become scattered or absorbed. Suspended clays and other organic particles cause turbidity. It can be used as an indicator of certain water quality constituents such as predicting the sediment concentrations.

Nitrogen (N) **-** Sources of nitrogen in storm water are from the additions of organic matter to water bodies or chemical additions. Ammonia and nitrate are important nutrients for the growth of algae and other plants. Excessive nitrogen can lead to eutrophication since nitrification consumes dissolved oxygen in the water. Nitrogen occurs in many forms. Organic Nitrogen breaks down into ammonia, which eventually becomes oxidized to nitrate-nitrogen, a form available for plants. High concentrations of nitrate-nitrogen (N/N) in water can stimulate growth of algae and other aquatic plants, but if phosphorus (P) is present, only about 0.30 mg/l of nitrate-nitrogen is needed for algal blooms. Some fish life can be affected when nitrate-nitrogen exceeds 4.2 mg/l. There are a number of ways to measure the various forms of aquatic nitrogen. Typical measurements of nitrogen include Kjeldahl nitrogen (organic nitrogen plus ammonia); ammonia; nitrite plus nitrate; nitrite; and nitrogen in plants. The principal water quality criteria for nitrogen focus on nitrate and ammonia.

Phosphorus (P) **-** Phosphorus is an important component of organic matter. In many water bodies, phosphorus is the limiting nutrient that prevents additional biological activity from occurring. The origin of this constituent in urban storm water discharge is generally from fertilizers and other industrial products. Orthophosphate is soluble and is considered to be the only biologically available form of phosphorus. Since phosphorus strongly associates with solid particles and is a significant part of organic material, sediments influence concentration in water and are an important component of the phosphorus cycle in streams. The primary methods of measurement include detecting orthophosphate and total phosphorus

Existing Storm Drain System

The City of Lodi maintains a network of storm drainage facilities consisting of storm drain lines, inlet catch basins, drainage ditches, and retention and detention basins. The storm drain system is divided into large areas called Drainage Basin Areas. The project site is located in Drainage Basin Area F. From the vicinity of the project site, storm water runoff flows in a generally southeasterly direction through a series of underground pipes that eventually discharge into two public park facilities that also function as storm water detention basins, DeBenedetti Park and Beckman Park. During periods of high flows, storm water that is pumped from the detention basins discharges into the Woodbridge Irrigation District Canal, which runs adjacent to Beckman Park. The Woodbridge Irrigation District Canal ultimately discharges to the Sacramento-San Joaquin Delta.

The project site generally drains from north to south, with the storm drainage being collected in a ditch along Kettleman Lane and then conveyed to the west. Presently, a 42" storm drain line stubs to the property in Lower Sacramento Road. This line drains eastward across Lower Sacramento Road and through the Safeway Shopping Center to Tienda Drive. A future 30" storm drain line is planned to extend across the project site, sloping from west to east and tie into the 42" line in Lower Sacramento Road. This proposed future line is intended to be constructed in conjunction with the development of an on-site temporary detention pond, and would facilitate emptying of the pond after peak flows have subsided.

Floodplain Issues

The project site is located in an area that would be subject to shallow flooding in the event of a 100-year flood. Per the Federal Emergency Management Agency (FEMA) Flood Insurance Map (FIRM) for the City of Lodi, San Joaquin County California, Community Panel Number

0602990285B, the site is located in Flood Zone B. This zone indicates areas that are: 1) between the limits of the 100-year and 500-year flood; 2) subject to 100-year flooding with depths less than 1 foot; 3) have a contributing area of less than one square mile; or 4) protected by levees from base floods. Construction of the project would be subject to the City's flood elevation and building code requirements, and would not be expected to create a significant hazard to persons or property.

3.9.2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This section describes the thresholds of significance and discusses both storm water conveyance and storm water quality impacts and mitigation measures that would be required to reduce the potential impacts to a less than significant level.

Thresholds of Significance

CEQA Guidelines

The following thresholds of significance, based on the criteria contained in Appendix G of the State CEQA Guidelines, as amended January 2, 2002, will be used to determine whether or not implementation of the proposed retail center would result in significant hydrology or drainage impacts. Impacts would be considered significant if implementation of the Specific Plan would result in:

- Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff.
- Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Other Agency Thresholds

In addition to the above criteria, the following relevant local City design standards are used to assess potential impacts resulting from development of the proposed retail center:

City of Lodi Standards for Temporary Detention Basins

Section 3.702 The design of on site detention basins shall adhere to the following criteria:

- A 48-hour, 10-year storm, total rainfall of 3.3 inches shall be used if a reasonable outlet is provided. If no disposal other than evaporation, percolation or irrigation is provided, a 48-hour, 100-year storm, total rainfall of 4.8 inches, shall be used.
- The maximum water surface of the basin shall be 1 foot below the elevation of the top of curb at the lowest catch basin inlet within the tributary area and a maximum of 1 foot above the design hydraulic grade line at the basin.
- Fencing shall be provided around all basins greater than 3 feet in depth.

- Adequate all-weather access shall be provided.
- The tributary drainage system shall be designed to connect to the City's future storm drainage system.
- Any additional requirements placed as a condition of approval shall be incorporated into the design.

<u>IMPACT 3.9-A Hydrologic Impacts</u>: The proposed project would alter the hydrologic conditions on the project site by replacing pervious native soils and vegetation with impervious surfaces, and thereby increasing runoff from the site. The project, however, includes the construction of an on-site detention basin sized to contain the volume of runoff produced by the 48-hour, 10-year storm, per City standards. As a result, the impacts would be reduced to less than significant levels. (Less Than Significant Impact)

The project includes the construction of a detention basin on the west side of the property to detain storm water flows from the developed project site prior to release into the City's storm drain system. A Drainage Study was conducted for the project by Phillippi Engineers that determined the sizing of an on-site detention basin to serve the project. Adhering to the City's Standards for Temporary Detention Basins and incorporating information based on a field reconnaissance, the study calculated the size required for the basin. Consistent with City criteria, the 48-hour, 10-year storm (3.3 inches of rainfall) was used as the design standard because the project would utilize the existing 42-inch storm drain line on the east side of the site and the planned 30-inch line across the site as an outlet to drain the basin. Use of the 48-hour, 100-year storm for design purposes was therefore not required.

The rational method was used in the calculations to determine runoff volumes. Runoff coefficients of 0.95 for pavement areas, 0.80 for roof areas, and 0.20 for landscaped areas were used. For purposes of the study, the landscaped areas were assumed to represent approximately 10% of the site area, the roof areas approximately 17%, and the remaining paved areas approximately 73%. The study determined that the minimum volume capacity required for the basin, based on the 48-hour, 10-year storm, would be 10.4 acre-feet.

The depth of water necessary to accomplish gravity flow out of the basin (into the storm drain system) would be 5.37 feet, however, by excavating the basin so that it's bottom is 1 – 2 feet below the outfall, rain water from smaller storms would be allowed to accumulate in the basin, effectuating the settling necessary to accomplish storm water pollutant removal. The proposed design of the basin, therefore, would detain the increased amount of runoff generated from the project site, and would provide the additional benefit of storm water treatment. Impacts to the existing storm drain system would be considered less than significant.

IMPACT 3.9-B Storm Water Quality Impacts: The proposed retail center would generate polluted runoff from impervious surfaces and landscaped areas on the site. However, the project includes the construction of an on-site detention pond which is designed to reduce the amount of pollutants in storm water that is discharged to the City's storm drain system, and would include the installation of a bioswale along the eastern boundary. (Less than Significant Impact With Mitigation Incorporated)

As described in the previous impact discussion, the project proposes the construction of an on-site basin that would serve the dual functions of 1) reducing the rate of runoff from the site, and 2) providing a mechanism for the removal of storm water pollutants. In addition, a bioswale would be constructed along the eastern property boundary to facilitate the removal of storm water pollutants.

Additional pollution prevention maintenance practices would be included in the project. Such practices include reducing landscape irrigation as feasible to minimize the potential for overspray and nuisance runoff, use of integrated pesticide management, and good housekeeping practices such as regular sweeping of paved surfaces and routine trash pick-up. The following mitigation measure would reduce potential impacts to less than significant levels.

Mitigation 3.9-B: The project sponsor shall implement the following non-structural BMPs, from the California Storm Water Best Management Practice Handbook, to the maximum extent feasible:

- *Public Education/Participation* – **Disseminate informational materials for employees of the site and possibly post signs informing guests of the natural resources downstream and the possibility of negative impact associated with the use of the land.**
- *Housekeeping Practices* - **Clean up spills, practice proper disposal of certain substances and wise application of chemicals.**
- *Material Storage Control* - **Minimize the storage of hazardous material on-site, store materials in designated areas, install secondary containment, conduct regular inspections, and train employees and subcontractors.**
- *Vehicle Leak and Spill Control* - **Maintain equipment and security vehicles.**
- *Street Cleaning* – **Regular cleaning of paved areas, streets, and access roads.**
- *Contaminated or Erodible Surface Areas* - **Prevent and reduce pollutants from contaminated or erodible surface areas by leaving as much vegetation on site as possible, minimizing soil exposure time, stabilizing exposed soils, and prevent storm water runoff and run-on. (Less Than Significant Impact)**

<u>IMPACT 3.9-C Construction Impacts:</u> Implementation of the project could result in storm water pollution from construction activities conducted on the site. However, conformance with NPDES Permit regulations requiring construction storm water quality controls and Best Management Practices would reduce potential impacts to less than significant levels. (Less Than Significant Impact With Mitigation Incorporated)

Construction of the proposed development has the potential to create on-site erosion and sedimentation of local waterways, due to grading and earthmoving activities. In addition, project construction could also produce typical pollutants such as nutrients, heavy metals, pesticides and herbicides, toxic chemicals related to construction and cleaning, and sanitary wastes, fuel, and lubricants.

As part of its compliance with NPDES requirements, a Notice of Intent (NOI) would need to be prepared and submitted to the CVRWQCB providing notification and intent to comply with the General Permit to Discharge Storm Water Associated with Construction Activity. Prior to construction, a SWPPP is required for the construction activities onsite. A copy of the SWPPP must be available and implemented at the construction site at all times. The SWPPP outlines the source control and/or treatment control BMPs that would avoid or mitigate runoff pollutants at the construction site to the “maximum extent practicable”. Implementation of the following mitigation measure would reduce potential impacts to less than significant levels.

> **Mitigation 3.9-C: Prior to approval of a grading plan, construction BMPs shall be outlined in a Storm Water Pollution Prevention Plan (SWPPP), and shall include elements regarding construction site planning, housekeeping practices and material storage, vehicle and equipment fueling and maintenance, erosion and sedimentation controls, slope stabilization, dust control, road and construction entrance stabilization, storm drain inlet protection, and temporary drainage systems. Long-term post-construction operation and maintenance of both structural and non-structural BMPs shall be the responsibility of the project sponsor. (Less Than Significant Impact).**